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A Contribution to the Study of American DOLICHOPODIDÆ.

BY J. M. ALDRICH.

TABLE OF GENERA.

1. Fourth longitudinal vein with a widely divergent fork on the front side...2.
Fourth longitudinal vein generally without fork; if one is present it is nearly parallel with the main vein.....4.
2. Cilia of tegulæ black, third vein converging to the fourth at tip, scutellum with four large bristles.....**Psilopodinus** Bigot.
Cilia of tegulæ pale, third vein parallel with fourth at tip, scutellum with two large and usually two small bristles.....3.
3. Face wide, vertex deeply excavated**Agonosoma** Guérin.
Face narrow, vertex scarcely excavated.....**Leptorhethum** Aldrich.
4. Thorax almost as broad as long; head wider than its own height or than the thorax, face very wide, vertex deeply excavated.
Mesorhaga Schiner.
Head and thorax not as described.....5.
5. Fourth vein bent forward, forming an apical cross-vein; posterior cross-vein oblique, parallel with the margin of the wing.
Plagioneurus Loew.
Posterior cross-vein nearly transverse, usually no apical cross-vein.....3.
6. Hind metatarsi with large bristles above**Dolichopus** Latreille.
Hind metatarsi without large bristle above7.
7. Hypopygium long, extending forward under the venter.....8.
Hypopygium short, not extending forward under the venter.....20.
8. Arista plumose9.
Arista bare or pubescent11.
9. Face wide, bulging on the lower part.....**Pelastoneurus** Loew.
Face narrow.....10.
10. Third antennal joint of male large, elongate, excavated above
Leptocorypha Aldrich.
Third antennal joint short, normal**Sarcionus** Aldrich.
11. Before the scutellum the posterior third of the dorsum is hollowed out, or at least distinctly flattened12.
Before the scutellum convex as usual15.
12. Posterior cross-vein distant, much more than its own length from the margin of the wing (measured on the fifth vein).....13.
Posterior cross-vein distant about its own length from margin14.
13. Second antennal joint prolonged along the inner side of the third.
Cœloglutus Aldrich.
Second antennal joint not so prolonged, or forming a cup for the third.
Thrypticus Gerstaecker.
14. Third and fourth veins parallel towards the tip; maritime species.
Aphrosylus Walker.
Third and fourth veins convergent; found on bark of trees.
Medeterus Fischer.

15. The face of the male extends below the eyes, hanging down before the mouth, apron like.....**Polymedon** Osten Sacken.
The face of the male reaches about as far as the lower edge of the eyes; head vertically elongated.....**Tachytrechus** Stannius.
Face of the male reaching as far as the lower edge of the eyes, but the head not elongated**Paraclius** Loew.
16. Third and fourth veins parallel towards the tip *17.
Third and fourth veins distinctly convergent.....19.
17. Bristles of thorax yellow**Thrypticus** Gerstaecker.
Bristles of thorax black.....18.
18. First antennal joint bare above.....**Peloropecodes** Wheeler.
First antennal joint hairy above.....**Gymnopternus** Loew.
19. The last segment of the fourth vein gradually approaching the third.
Hercostomus Loew.
Last segment in the middle abruptly curving forward, then gradually resuming its former course, ending near the third vein.
Paraclius Loew.
20. Costal vein extending only to the tip of the third vein, the latter part of the fourth vein evanescent.....**Asyndetus** Loew.
Costal and fourth veins normal.....21.
21. First antennal joint hairy above.....22.
First antennal joint bare above.....26.
22. Fourth vein towards the tip strongly curved towards the the third, nearly reaching it in the margin.....**Pelastoneurus** Loew.
Fourth vein parallel with the third, or slightly convergent.....23.
23. Arista dorsal, face very narrow, palpi small.....**Anepsius** Loew.
Arista dorsal, face wide, palpi large.....24.
Arista nearly or quite at the tip of the large, pointed third joint.....25.
24. Arista plumose.....**Phylarchus** Aldrich.
Arista pubescent**Diostracus** Loew.
25. Proterior cross-vein distant about its own length from the end of the fifth vein.....**Hypocharassus** Mik.
Posterior cross-vein much more than its own length from tip of fifth vein.
Argyra Macquart.
26. A concave or distinctly flattened, bare space before the scutellum27.
Thoracic dorsum convex as usual.....31.
27. Bristles of thorax pale yellow.....**Chrysotimus** Loew.
Bristles black, rarely brownish28.
28. Fourth vein parallel with the third beyond the cross-vein, or nearly so..29.
Fourth vein converging towards the third, either gradually or by a double curve.....**Neurigona** Rondani.
29. Acrostichal bristles present only at the anterior edge of thorax, very minute**Xanthochlorus** Loew.
Acrostichal bristles well developed, two-rowed.....30.
30. Very minute, blackish, opaque species**Achalcus** Loew.
Small, yellow species**Xanthina** Aldrich.

* *Thrypticus minor* Ald. from St. Vincent, W. I., has the 3rd and 4th veins somewhat convergent.

31. Wings elongate, the posterior cross-vein beyond the middle, less than its length from tip of fifth vein (*Hydrophorinae*).....32.
 Wings not elongate, posterior cross-vein scarcely beyond the middle, more than its length from end of fifth vein (if less, the hind metatarsus shorter than the following joint).....34.
32. Fore femora slender.....**Liancalus** Loew.
 Fore femora thickened, with spines below33.
33. Spines of fore femora very short, thoracic dorsum without well-marked pollinose lines.....**Hydrophorus** Fallén.
 Spines of fore femora long, dorsum with pollinose lines...**Scellus** Loew.
34. Outer appendages of the hypopygium filiform; arista dorsal.
Nematoproctus Loew.
 Not with both characters.....35.
35. Second joint of antenna with a thumb-like projection along the inner side of the third36.
 Not with such projection.....37.
36. Face of female wide, the lower part projecting, roof-like.
Syntormon Loew.
 Face of female not so constructed**Parasyntormon** Wheeler.
37. Eyes of male contiguous or nearly so below the antennæ.....38.
 Eyes of male contiguous or nearly so above the antennæ.
Diaphorus Meig., pt.
 Eyes closest together at the level of the antennæ; middle legs of male distorted or with peculiar structure.....**Campsicnemus** Walker.
 Eyes of male not contiguous nor closely approximated39.
38. Pulvilli of male fore tarsi conspicuously enlarged... **Eutarsus** Loew.
 Pulvilli not enlarged.....**Chrysotus** Meigen, pt.
39. Thorax bright green, abdomen yellow, with a good deal of silvery pollen.
Leucostola Loew.
 Not so marked.....40.
40. Face broad, the palpi large, reposing on the proboscis; pollinose species.
Thinophilus Wahlberg.
 Palpi of ordinary size or else projecting lamelliform, free from the proboscis41.
41. Third joint of the antenna in the male conspicuously long, awl-shaped, not much wider at base than the first joint... **Rhaphium** Meigen.
 Third joint long, lancet-shaped, wider than first joint.
Porphyrops Meig.
 Third joint short, the tip sometimes drawn out into a point.....42.
42. Abdomen of male with four blunt bristles at the tip.
Diaphorus Meig.
 Abdomen destitute of these bristles43.
43. Arista nearly or quite apical.....**Chrysotus** Meigen, pt.
 Arista dorsal44.
44. Costa thickened near the apex of the first vein; hind cross-vein at right angles to the costa**Teuchophorus** Loew.
 Costa not thickened; cross-vein slanting more or less towards the tip of the wing45.

45. First joint of fore tarsus shortened in the male.

Nothosympyenus Wheeler.

First joint longer than the following **Sympyenus** Loew.

Since I prepared the table of genera of this family for Dr. Williston's Manual, many changes in the genera have occurred. The following notes explain these :

Of those omitted in this table :

Psilopus goes in *Psilopodinus* ; *Gnamptopsilopus* in *Agonosoma*.

Hygroceleuthus falls into *Dolichopus*.

Aptorthus is a synonym of *Mesorhaga*.

Pæcilobothrus does not occur in North America, the species being herein assigned to *Sarcionus*.

Metapelastoneurus falls into *Pelastoneurus*.

Aphantotimus is a synonym of *Thrypticus*.

Dactylomyia falls into *Neurigona*.

Macellocerus falls into *Tachytrechus*.

Lasiargyra falls into *Argyra*.

Lyroneurus falls into *Diaphorus*.

Of added genera :

Aphrosylus and *Teuchophorus* are European genera found to occur here.

Cæloglutus was overlooked before.

Parasyntormon and *Nothosympyenus* are new genera by Wheeler.

Sarcionus, *Phylarchus* and *Xanthina* are new genera by myself.

Of recent genera not included :

Xiphandrium, assigned to our fauna by Wheeler, does not really occur in North America.

Drepanomyia is a synonym of *Hypocharassus*.

Parhydroporus falls into *Hydroporus*.

Xanthotricha is a synonym of *Thrypticus*.

Synarthrus, revived by Wheeler, has been rejected by Mik, in favor of *Syntormon*.

The bibliographical references will be given in full in my forthcoming Catalogue of North American Diptera.

PELASTONEURUS, PARACLIUS and SARCIONUS.

These three genera are in some cases difficult to distinguish from each other ; briefly, *Pelastoneurus* and *Sarcionus* have a plumose arista, while that of *Paraclius* is hardly pubescent ; the face in

Pelastoneurus is wide and bulges below, while in *Sarcionus* it is narrow and does not bulge.

To avoid mistakes of generic reference, I have combined the tables of the three genera.

Combination Table of North American Species.

1. Femora largely black 2.
Femora yellow, or but little infuscated..... 10.
2. First part of costa greatly thickened in the male, noticeably so in the female 3.
First part of costa not perceptibly thickened 4.
3. Tibiæ yellow (W. I.)..... **Paraclius abdominalis** Aldrich.
Tibiæ black (La., N. Y., Cuba, Mex.)... **Paraclius albonotatus** Loew.
4. Fore femora yellow, middle and hind ones with the apical third and half respectively black (Mex.)..... **Paraclius femoratus** Aldrich.
Fore femora black, with yellow tips; middle black, with apical half yellow; hind ones yellow, with black tips (Cal.).
Pelastoneurus dissimilipes Wheeler.
Femora, at least of male, more uniformly black..... 5.
5. Antennæ reddish, except the upper edge and tip; thoracic dorsum bright bluish green (W. I.) **Paraclius fuscicornis** Aldrich.
Antennæ black..... 6.
6. Tibiæ of male wholly black 7.
Tibiæ of male largely yellow..... 8.
7. Upper half of the face bright green (Mex.).
Pelastoneurus hamatus Ald.
Upper half of face with whitish dust (W. I.)... **Paraclius nigripes** Ald.
8. Hypopygium small, rounded (Mex.)..... **Paraclius humeralis** Ald.
Hypopygium decidedly elongated..... 9.
9. Face of male very narrow below (Tex.)... **Paraclius pumilio** Loew.
Face of male of uniform width (Fla.)..... **Paraclius scutatus** n. sp.
10. Wing of male with a rounded apical brown spot (Mex.).
Pelastoneurus bigeminatus Aldrich.
Wing in both sexes with several distinct brown spots..... 11.
Wing not spotted, or with one or two spots on the veins 12.
11. Fourth vein uniformly approaching the third (Mex.).
Pelastoneurus punctipennis Say.
Fourth vein bent abruptly towards the third (Fla.).
Pelastoneurus pictipennis Wheeler.
12. A spot of white pollen on the posterior part of the thorax before the scutellum (N. Y., Cal., Fla.)... **Pelastoneurus longicauda** Loew.
Without such spot 13.
13. Antennal arista of male ending in a lamella..... 14.
Antennal arista not ending in a lamella..... 15.
14. Arita of male long, tapering, thin (W. I.).
Paraclius discifer Aldrich.
Arista quite short, thick (E. U. S.)... **Paraclius claviculatus** Loew.

15. Inner claw of male fore tarsus enlarged and bent so as to form a small holding organ (W. I., Mex.)... **Pelastoneurus unguiculatus** Ald.
Claw not so modified16.
16. Orbital cilia pale below26.
Orbital cilia black17.
17. Tips of hind femora infuscated above.....18.
Tips of hind femora not infuscated21.
18. Dorsum of abdomen deep violet in color; large species (Cal., Ariz., S. D.).
Pelastoneurus cyaneus Wheeler.
Dorsum of abdomen not violet.....19.
19. Dorsum of thorax violet (N. Y., Mass., Fla.).
Pelastoneurus lamellatus Loew.
Dorsum of thorax not violet (N. Y., Cal., Fla.).
Pelastoneurus longicauda Loew.
20. Fore coxæ black (N. Y.)..... **Pelastoneurus abbreviatus** Loew.
Fore coxæ yellow, except at base (N. Y., Ill., Mex.).
Pelastoneurus lugubris Loew.
21. Hypopygium short, the lamellæ divided, forming four long filaments (Kans., S. D.)..... **Pelastoneurus kansensis** Aldrich.
Hypopygium of different structure22.
22. Dorsum of thorax opaque brown, with two fine grey lines; white spots absent from transverse suture (N. Y., Ill., Mex.).
Pelastoneurus lugubris Loew.
Dorsum more or less shining, the white spots distinct23.
23. Face of male in narrowest place not one-tenth the width of the head (Mex.).
Sarcionus flavicoxa Aldrich.
Face of male much wider24.
24. Face of male brown, lamellæ forked (Tex.).
Pelastoneurus furcifer Loew.
Face of male brown, lamellæ not forked (La.).
Pelastoneurus proximus n. sp.
Face of male white or whitish25.
25. Thoracic dorsum deep violet in color (Fla., Ga., La., D. C.).
Pelastoneurus lætus Loew.
Dorsum only a little violet behind; hypopygium slender, lamellæ small, oval (La.)..... **Pelastoneurus parvus** n. sp.
Dorsum only a little violet behind; hypopygium thickened, the tip of the black lamella drawn out into a long, curved, black process (Quebec).
Pelastoneurus falcatus n. sp.
26. Face of male with a brown stripe in middle, sides greyish white (Middle States, Mex.)..... **Pelastoneurus cognatus** Loew.
Face of male not so marked27.
27. Lamellæ of hypopygium triangular, the upper basal angle prolonged in a long filament, projecting outwards or backwards28.
Lamellæ of different structure.....29.
28. Color bright green; arista plumose (W. I., Mex.).
Pelastoneurus argentifer Aldrich.
Color bright green; arista pubescent (W. I., Mex.).
Paraclius filifer Aldrich.
Color bronze-green (Mass.)..... **Paraclius vicinus** n. sp.

29. Hind femora infuscated along the entire upper edge (Fla.).

Paraclius propinquus Wheeler.

Hind femora infuscated at the tip, or not at all.30.

30. Face of female brown in the middle31.

Face of female not brown in middle35.

31. Fore coxæ infuscated beyond the middle32.

Fore coxæ not or scarcely infuscated.33.

32. Lamellæ of hypopygium straight, with rounded tips (U. S., Mex.).

Pelastoneurus vagans Loew.

Lamellæ curved, with acute tips (Cal.).

Pelastoneurus occidentalis Wheeler.

33. Arista of male long, with blunt tip (Wis., Ill., La.).

Pelastoneurus neglectus Wheeler.

Arista of male as usual.34.

34. Lamellæ of hypopygium black (Fla.).

Pelastoneurus floridanus Wheeler.

Lamellæ yellow, or mainly so (W. I.).

Pelastoneurus fasciatus Roeder.

35. Antennæ wholly black (W. I.).....**Paraclius arcuatus** Loew.

Antennæ not wholly black.36.

36. A double black spot before the root of the wing, of which the anterior part extends towards the middle of the dorsum (W. I.).

Paraclius quadrinotatus Aldrich.

Ante-alar spot not divided.37.

37. Thoracic dorsum with one or more distinct longitudinal lines.38.

Thoracic dorsum without lines39.

38. Thorax dark bronze-green (N. Y.).

Pelastoneurum alternans Loew.

Thorax bright blue-green (W. I., Mex.)..**Sarcionus lineatus** Aldrich.

39. Upper part of the face bright green (W. I., Mex.).

Pelastoneurus argentifer Aldrich.

Upper part of the face white-dusted.40.

40. Last section of fourth vein curved in the middle (W. I.).

Paraclius venustus Aldrich.

Same curved distinctly beyond the middle (W. I.).

Paraclius bellus Aldrich.

In the table, the section numbered 19 and 20 presents the greatest difficulty. I am unable to recognize *abbreviatus* in any of my material, and it may be the same as *longicauda*, in which the spot before the scutellum is sometimes evanescent. There seem to be some specimens of *lamellatus* in which the dorsum of the thorax is not violet but dark bronze. They may belong to a distinct species, but I cannot settle the question with my material. In other respects the table ought to work well after a little familiarity with it. *Leptocorypha pavo* Aldrich, from St. Vincent, W. I., is a near rela-

tive of *Sarcionus*. There is only one member of the genus, and it has large, elongated antennæ, and the hypopygium is yellow.

***Pelastoneurus scutatus* n. sp.**

Male.—Face wide, in the middle with a shield-shaped brown spot, reaching entirely across; below and above the pollen is of a whitish or glaucous color. The point of the shield reaches to the lower edge of the face in the middle, and there is a projection from the middle above also; so the white is divided into four spots. Antennæ blackish, with a trace of yellow at the bases of the joints; arista feathered with moderately long hairs. Front blackish, with a steel-blue spot on each side; cilia of inferior orbit black.

Thorax rather opaque brown, before the scutellum with a violet spot; tegulæ yellow, with black cilia; halteres with brownish knob; pleuræ blackish, with little dust.

Abdomen quite uniform greenish brown in color; hypopygium black, large, the lamellæ smallish, rather narrow, black, with a few long black hairs on the edge and some finer ones on the outer side.

Legs in the described specimen with an immature appearance. The coxæ and femora distinctly black, the tibiæ and tarsi brown. In a well-matured specimen the tibiæ would probably be partly yellow.

Wings uniformly infuscated, costa not thickened, cross-vein almost exactly at right angles to the axis of the wing.

Length 3 mm.

One male, Biscayne Bay, Fla., collected by Mrs. Slosson.

***Pelastoneurus parvus* n. sp.**

Male.—Face wide, covered with bluish white dust; palpi yellowish; antennæ yellow, the third joint large, a little longer than the others together, rounded at tip, the apical half blackened; arista plumose, with rather long hairs. Front greenish brown, dull; cilia of inferior orbit black.

Thorax rather dull green above, with distinct violet reflections near the scutellum; the sutural white spot large and distinct; usual black mark above the wing also conspicuous; pleuræ dark green, whitish-dusted; halteres and tegulæ yellow, cilia of the latter black.

Abdomen green, only moderately bright; the first segment above distinctly brighter than the rest in my specimen; incisures with faint darker bands; hypopygium elongated, rather slender, black, the lamellæ dark brown, small and rounded, with small black hairs on the margin, and still finer ones, mostly yellowish, rather abundant on the outer surface.

Fore coxæ yellow, a little infuscated at base; middle and hind coxæ with yellow tips; femora and tibiæ yellow; tarsi very slightly infuscated from the first joint.

Wings rather rounded, subhyaline; the fourth vein with bend in the middle of its last section, approaching very close to the third, and ending considerably before the apex.

Length 3 mm.

One male, Opelousas, La., from Dr. Hough.

***Pelastoneurus falcatus* n. sp.**

Male.—Orbital cilia black, face of ordinary width, convex below and concave above in the usual form, with white pollen up to the root of the antennæ, but not very bright or silvery; palpi of the same color. Antennæ yellowish red, the upper part of the third joint infuscated; arista with the usual hairs. Color of front not observed. Thorax bronze-green, not very bright, the posterior part with a slight coppery reflection; the sutural groove at each side has the usual bright white spot (this should, in all cases, be viewed from above, the posterior end of the insect being turned towards the light), and an elongated black velvety spot lies behind the root of the wing, extending over the angle of the base of the scutellum. Pleuræ with thick grey dust; tegular cilia black, the tegulæ and halteres pale yellow. Abdomen bronze-green, the sides with only thin grey pollen in spots on the segments, the sixth segment covered with pollen; hypopygium stout, rather long, entirely pollinose except on the ventral edge, black; the lamellæ are black, with brownish hairs on the edge, and the apical angle is produced into a curved, stout, black, horn-like point, longer than the body of the lamella, rather sharp at tip, and provided towards the end with slender brown hairs, which form a distinct bunch on the inner side before the tip. The upper or inner pair of organs, called by Loew the inner lamellæ, have in this species a slender form and brown color, more yellowish at the base; they have a few slender, long dark hairs on the under side towards the tip. Fore coxæ wholly yellow, middle and hind ones black with the apical third yellow; remainder of legs yellow, the tarsi infuscated towards the tip, the front ones only on the last joint; hind metatarsus about two-thirds the length of the following joint. Wings moderately infuscated, with the third vein curving forward in the middle of its last section, thence almost straight to the margin.

Female.—Front purple or bluish purple, the face with a broad brown stripe, the upper part not very white. Thorax with a very distinct purple reflection on the posterior part; the velvety black spot on the sutural groove extends back over the root of the wing, and there is a second silvery spot, but much less bright, between its end and the spot which extends onto the corner of the scutellum.

Length 3 mm.

One male, two females, Montreal Island, Quebec, September 1 and 8, 1901 (Chagnon). The head of the male was destroyed, after it had been examined. The structure of the hypopygium is very distinctive, while the brown stripe in the face of the female occurs in only a few species.

***Paraclius vicinus* n. sp.**

Male.—Face rather wide, parallel, covered with brown dust, the upper part showing the green ground color. Antennæ reddish yellow, the third joint slightly larger than usual, darker towards the apex, which has a blunt point; arista with only microscopic pubescence. Front bright green. Cilia of inferior orbit white.

Thorax bronze-green, without any median stripe, near the scutellum in occasional instances with a more violet tinge; scutellum bright green; pleuræ with pale greenish dust. In a side view, the dust in the sutural groove is of the same color; from above it has the usual appearance of a white spot. Halteres and tegulæ yellow, the cilia of the latter black.

Abdomen rather coppery, with a uniform covering of thin grey dust, which in side view seems more concentrated on the sides of the segments; it does not hide the metallic color to any great extent. The abdomen is noticeably robust and rather short. Hypopygium small, black, with small, black, rounded lamellæ which, however, have a long black filamentous prolongation at the inner basal angle, usually difficult to perceive. This has a backward direction, and can usually be seen when the abdomen is viewed nearly from above.

Legs yellow, the fore coxæ scarcely infuscated at base, middle and hind ones almost wholly black; tarsi only a little infuscated.

Wings greyish, venation of the typical form with considerable concavity backward in the last section of the fourth vein.

Length 2.9 mm.

Female.—In these there is a fairly distinct median line on the thorax, otherwise no material differences.

Six males, two females, New Bedford, Mass., collected by Dr. Hough.

The species is closely related to *propinquus* Wheeler from Florida, but the latter has a distinct stripe on the thorax in both sexes, the hind femora infuscated above for the entire length, etc. Professor Wheeler's description of *propinquus* does not mention the thoracic stripe, but it is very prominent in two males that Mrs. Slosson sent me from Florida.

***Pelastoneurus proximus* n. sp.**

Male.—Face moderately wide, with brown dust; which in some specimens is a little paler close along the lower edge; antennæ yellow, the third joint somewhat elongated, brown at the tip; arista moderately plumose. Front shining, somewhat steel-blue on the sides. Cilia of the inferior orbit black.

Thorax dark green, with the usual dark spot on the side, and white one in the sutural groove; before the scutellum with a distinct violet tinge; pleuræ black, with grey dust; halteres and tegulæ yellow, cilia of the latter black.

Abdomen bronze-green, on the sides of the segments with patches of white dust; hypopygium elongate, black, the lamellæ entirely black, rather long, a little pointed, with a thick row of slender, long blackish hairs on the edge. Above the lamellæ are two shorter filament-like organs (the "inner lamellæ" of Loew), dark brown in color, which have some slender brown hairs in one or two tufts near the tip.

Legs yellow, middle and hind coxæ about half black, tarsi very slightly infuscated.

Wings subhyaline, fourth vein bent gradually about its middle, ending considerably before the tip.

Length 2.9 mm.

Female.—Face brown in the middle, whitish along the sides; otherwise not differing materially from the male.

Five males, one female, Opelousas, La., from Dr. Hough.

Except for the lamellæ being so very different, I should have taken this for *Pelastoneurus furcifer* Lw.

PSILOPODINUS.

Bigot, Annales Soc. Ent. France, 269, 1890.

Aldrich, Canad. Ent., Aug., 1904, 246.

The genus is represented in America by a large number of species, especially in the warmer regions. Many were described by the early writers without mentioning the essential characters. When I came to work up the Mexican and Central American Dolichopodidae for *Biologia Centeali-Americana*, I found it necessary to undertake a thorough study of all the American species, so far as they could be made out from the rich material furnished me, my own collection, and the descriptions. The results, as far as they pertain to the fauna in that work, will be found in *Biologia*, Diptera, I Suppl., 350-364, where twenty-three new species are described, and a table of species given, the old name *Psilopus* being used.

I find myself with a considerable residuum on hand, consisting of four new North American and two South American species, which for the sake of completeness I mentioned in my table, but could not publish at that time on account of their being extra limital. The descriptions are given herewith, preceded by a table of the American species known to me (*pilosus* is the only exception—I have not seen it).

TABLE OF MALE SPECIES.

- | | |
|--|------------------------------|
| 1. Femora black | 2. |
| Femora yellow | 35. |
| 2. Wings with dark markings..... | 3. |
| Wings without dark markings..... | 22. |
| 3. Fore tarsi with dense black fringe on sides of 4th and 5th joints, middle tarsi with 2nd and 3d joints less broadly fringed (Mex.). | |
| | bifimbriatus Aldrich. |
| Fore tarsi of different structure..... | 4. |
| 4. Fore tibiae black | 5. |
| Fore tibiae pale, at most somewhat brownish..... | 9. |
| 5. Face with numerous, delicate, pale hairs (U. S.).... | patibulatus Say. |
| Face destitute of pale hairs..... | 6. |
| 6. Second joint of antennæ with many very long bristles..... | 7. |
| Second joint of antennæ with few and short bristles..... | 8. |
| 7. Last four joints of fore tarsus short, subequal (West. U. S.). | |
| | pilicornis n. sp. |
| These joints of gradually decreasing length (West. U. S., Mex.). | |
| | melampus Loew. |
| 8. The brown crossbands broadly connected on the fourth vein, leaving a round hyaline drop in the first posterior cell (Brazil). | |
| | guttula Wiedemann. |
| Crossbands not connected behind; 5th joint of fore tarsus slightly compressed, with silvery reflection on inner side (Mex.).... | præstans Aldrich. |

9. All tarsi wholly black (Brazil).....**guttula** Wiedemann.
Fore tarsi wholly pale, middle ones black, with narrow silver fringe above
on last two joints (Mex., Brazil).....**diffusus** Wiedemann.
Fore and middle tarsi little infuscated, 4th joint of latter pure white, not en-
larged (W. I., Mex., Brazil).....**bellulus** Aldrich.
Fore tarsi infuscated, except part of first joint.....10.
10. Knob of halteres infuscated.....11.
Knob of halteres yellow.....16.
11. Wings with only a faint cloud, before the third vein...**cilipes** Aldrich.
Wings with two crossbands, or at least the hind crossvein infuscated...12.
12. Middle and hind tibiae entirely black.....13.
At least middle tibiae largely yellow.....14.
13. Middle metatarsi ciliated above (Cuba).....**pilosus** Loew.
Middle metatarsi not ciliated above (Mex.).....**inornatus** Aldrich.
14. Middle metatarsi ciliated (Mex., Brazil).....**triseriatus** Aldrich.
Middle metatarsi not ciliated.....15.
15. Third and fourth joints of hind tarsi subequal, a little swollen (Mex.).
atricauda Aldrich.
These joints of normal structure (Cuba, Jamaica, Brazil).
jucundus Loew.
16. Apical third of fore coxa, with trochanter and base of femur, yellow (Mex.).
coxalis Aldrich.
Not more than extreme apex of fore coxa yellow.....17.
17. Middle tibia with a row of small bristles on the front of the inner side, ex-
tending the whole length (Mex.).....**genualis** Aldrich.
Middle tibiae with a row of stout bristles on outer side, middle metatarsus
ciliated (Mex., Brazil).....**triseriatus** Aldrich.
Middle tibiae with only the usual bristles... 13.
18. Last two joints of hind tarsus flattened..... 19.
Last two joints of hind tarsus not flattened.....20.
19. Crossbands broad, including half the wing (Brazil)...**gracilis** Aldrich.
Crossbands narrow, scarcely a fourth of the wing darkened (Mex.).
depressus Aldrich.
20. Middle tarsi entirely infuscated (Mex.).....**purpuratus** Aldrich.
Middle tarsi broadly yellow at base.....21.
21. Hypopygium minute, appendages inconspicuous (Mex., Brazil).
similis Aldrich.
Hypopygium large, the appendages large, flattened, black (Mex.).
atrolamellatus Aldrich.
22. Face with abundant slender hairs.....23.
Face bare.....27.
23. Face with dark hairs (Mex., Brazil).....**barbatus** Aldrich.
Face with pale hairs.....24.
24. First joint of middle tarsus beset with crooked bristles.....25.
First joint normal.....26.
25. Tip of abdomen with a tuft of strikingly long hairs (U. S., W. I., Mex.,
S. A.).....(*caudatulus* Loew) **caudatus** Wiedemann.
Tip of abdomen with only ordinary hairs (U. S.)...**scobinator** Loew.
26. Middle tibiae with a strikingly long apical spur (U. S.)...**calcaratus** Loew.
Middle tibia without unusually long spur (U. S.).....**inermis** Loew.

27. Arista at least two-thirds the length of the entire body.....28.
 Arista much shorter30.
28. Arista ending in a small disk, fore metatarsus not with long cilia above (Mex.).....**nobilissimus** Aldrich.
 Arista plain, fore metatarsus with long cilia above29.
29. Appendages of hypopygium pale, middle metatarsus also ciliated (U. S.).
comatus Loew.
 Appendages of hypopygium blackish, middle metatarsus plain (U. S.).
crinitus n. sp.
30. Thoracic dorsum covered with thin white dust, front densely silvery-pollinose (Mex.)... **argentatus** Aldrich.
 Thorax and front mostly shining.....31.
31. Costa with a row of erect cilia.....32.
 Costa without erect cilia33.
32. Second joint of fore tarsus shorter than any of the following (U. S.).
 (ciliatus Loew) **mundus** Wiedemann.
 Second joint longer than any following (Mex.).....**hirtipes** Aldrich.
33. Middle metatarsi with erect cilia above (Mex.).....**ciliipes** Aldrich.
 Middle metatarsi not so ciliated34.
34. Middle tibiæ yellow, color of body purple (Mex.)...**purpureus** Aldrich.
 Middle tibiæ yellow, color of body green (Mex.)...**forecipatus** Aldrich.
 Middle tibiæ black (U. S., W. I.).....**chrysoprasius** Walker.
35. Wings with dark markings.....36.
 Wings wholly hyaline44.
36. Antennæ yellow (Brazil, Mex.)**basilaris** Wiedemann.
 Antennæ black.....37.
37. The hyaline space between the crossbands extends forward to the second vein.....38.
 Hyaline space not reaching beyond third vein.....40.
38. First joint of fore tarsus white at tip, the following joints black, the fourth fringed above with black (Mex.)... **interceptus** Aldrich.
 Fore tarsi plain, gradually infuscated39.
39. Fore coxæ black (Mex.).....**pennifer** Aldrich.
 Fore coxæ yellow (Mex.).....**flavicoxa** Aldrich.
40. Cilia of tegulæ pale on lower half, third vein curved forward at tip (Brazil).
imperator n. sp.
 Cilia of tegulæ black.....41.
41. Second and thirds joints of fore tarsus stout, swollen, bristly (Mex.).
clavipes Aldrich.
 Fore tarsi plain, or only bristly.....42.
42. Fore coxæ green (U. S.).....**viridicoxa** n. sp.
 Fore coxæ pale43.
43. Middle metatarsus with a row of erect cilia on fore side (U. S.).
scaber Loew.
 Middle metatarsus plain (U. S.).....**sipho** Say.
44. Face with numerous pale hairs (U. S.)**flavipes** n. sp.
 Face bare45.
45. Middle metatarsi greatly elongated, ciliated (W. I.)... **insularis** Aldrich.
 Middle metatarsi plain, short (Mex.).....**tonsus** Aldrich.

Psilopodinus pilicornis sp. nov.

Male.—Wholly green and black, no yellow whatever, wings with two crossbands. Face dark green, but little dusted; antennæ black, second joint with about 12 stout bristles, which are longer than the antenna itself; palpi also with quite noticeable black hairs; front dark green, with slender pale hairs on the sides, some of which have a brownish cast. Thorax dark green, pleuræ but little dusted; halteres and tegulæ black. Abdomen brighter green, a black band on the anterior edge of each segment; these bands are wider on the apical segments, and on the last two cover half or more of the width; hypopygium small, black. Legs black, the femora greenish; fore tarsi much longer than the tibiæ, first joint longer than all the rest, with a row of small hairs on the under side and some small bristles on the outer side near the end, also a small enlargement below at the tip; second and third joints short, equal, enlarged below; fourth and fifth longer, equal. Metatarsus of middle foot as long as the tibia, on the upper side a row of extremely fine erect cilia, especially distinguishable at the base. Wings with a spot in the first basal, and the usual two crossbands brown; the bands are rather small, but in mature specimens distinct; in many teneral specimens they are faint.

The hairs on the incisures of the abdomen are longer and more erect than in most of the genus.

Female.—Halteres with yellow knob, few and short bristles on the antenna and abdomen, black bands of abdomen almost wholly absent.

Length 4-5 mm.

Many specimens: Lewiston, Idaho; Craig's Mt., Idaho; Seattle and Colfax, Wash.; Cal. (Coquillett and Baron, specimens collected by the latter being received by me from the Univ. of Kans.).

The common western species, differing from *melampus* chiefly in the short joints in the male fore tarsi.

Psilopodinus gracilis sp. nov.

Male.—Face blue-green, but little dusted; antennæ small, black, the second joint with few hairs, longest above; vertex deeply excavated, with few small hairs. Thorax bright green, rounded, the sides with a light greenish gray dust, in certain lights much more white. Halteres yellow, stem whitish. Abdomen unusually slender, with broad black bands; the metallic parts of the last two segments are violet; on the last four segments more than half is black (but this is in only one specimen); hypopygium minute, black, with four finger-like projections, blackened at tip. Coxæ and femora black, the fore and middle trochanters yellow, and the fore coxæ themselves rather brown than black; tibiæ yellow, the tarsi all gently infuscated from the base. Fore femora shorter than the tibiæ, the tarsi fully double the length of the tibiæ, slender and apparently free from hairs of any size; the fore tibiæ have on the outer side some three or four small bristles; middle tibiæ longer, with about the same bristles, their tarsi once and a half their length, slender, plain; hind tibiæ yellow, but infuscated at base and tip, hairy, especially on the inner side; the tarsi black towards the end, the last three joints are slightly flattened, short, a little concave below. Wings with very broad crossbands, which include more than the apical half of the area, and entirely reach the hind margin at the apex of the fifth vein; they are connected on the fourth vein, so as to enclose a large, rather square hyaline spot in the 1st posterior cell; the anterior fork of the fourth vein runs toward the base of the wing for a distance, then makes a short but rounded turn and runs to the tip.

Tegulæ and their cilia black.

Length 6 mm.

One male, Chapada, Brazil (Dr. Williston).

Psilopodinus crinitus sp. nov.

Male.—Deep green or blue species, very bright, the bristles of head, thorax, abdomen, and fore tibiæ greatly elongated, many of them wavy toward the tips; antennæ black, the arista over two-thirds the length of the entire body, whitish at tip; appendages of hypopygium small, blackish; all coxæ, trochanters and femora black, tibiæ, except the extreme tip of hind ones, yellow; hind tarsi wholly, the others but very slightly, infuscated; fore and middle tarsi slender, elongated, the fore metatarsus with long cilia above, otherwise the tarsi are of plain structure. Wings hyaline, a faint infuscation on the anterior apical part; posterior crossvein very oblique.

Female.—Arista slender, about half the length of the body; bristles of posterior part of the thorax and scutellum of noticeable length, and those of front and middle tibiæ quite strikingly elongated; fore metatarsus with distinct small bristles above; crossvein less oblique; otherwise as in male.

Length 4-4.5 mm.

Three males, six females, Florida (Lake Worth and Biscayne Bay), Mrs. Slosson; Fla. and Lawrence, Kans., from the Univ. of Kans.

This species has a most remarkable resemblance to *comatus*, under which name I reported it to Mrs. Slosson, but differs in having small, dark (instead of large, pale yellow) appendages to the hypopygium, and in the absence of cilia the entire length of the middle tarsus.

The females of the two species are readily distinguished from all others at present known by the distinct row of hairs or small bristles on the upper side of the fore metatarsus; I have been unable to find any distinct character to separate them from each other.

Psilopodinus imperator sp. nov.

Male.—Face bright metallic, overlaid with silver pollen; antennæ small, brownish black, almost destitute of bristles; front violet, thinly pollinose in a certain light, with pale hairs on the sides. Thorax green, the scutellum and part before it of a beautiful rosaceous, running into purple; pleuræ with pure white pollen; halteres moderately infuscated; cilia of tegulæ pale on the lower half, blackish above. Abdomen slender, with rather long bristles; the basal three joints conspicuously marked with a non-metallic brown color, the incisures of the following part with moderate black bands; hypopygium small, rounded, brownish black, with two slender, acuminate, brown organs projecting forward; venter brownish. Middle and hind coxæ brown; fore coxæ and all trochanters, femora and tibiæ yellow; hind knees slightly infuscated; fore tibia with only one or two minute bristles, fore metatarsus much longer than the tibia, with a few minute hairs below; middle tarsus once and a half as long as the tibia, infuscated from the middle of the first joint; hind tibia moderately hairy on the inner side, on the outer with two small bristles; hind tarsi infuscated from the base.

Wings large and broad, with the usual two crossbands, which are connected in front as far as the third vein, which curves broadly backward in the latter part of its course, and then at the tip gently forward, in the manner typical of *Agonosoma*. Second posterior cell largely subhyaline.

Length 8 mm.

One male, Rio de Janeiro, November (Dr. Williston).

This is the specimen referred to in Kans. Univ. Quart., II, 47, as being intermediate between *Gnamptopsilopus* and the restricted genus *Psilopus*. It has four large bristles on the scutellum.

***Psilopodinus viridicoxa* sp. nov.**

Strikingly similar throughout to *scaber*, but has the fore coxæ green, with yellow tip.

Face green, thinly white pollinose, antennæ black, small, with one or two rather noticeable bristles above on the second joint; front bright green, pollinose on the lower border, with a few pale hairs on the sides. Thorax bright green, the sides moderately pollinose; halteres yellow. Abdomen green, with narrow black bands; hypopygium small, black, with minute black appendages. Front coxæ green, the tips yellow, densely covered with white hair, and moderately pollinose with white; trochanters black, the fore ones somewhat yellowish; femora and tibiæ yellow; fore and middle tarsi infuscated from the tip of the first joint, hind tarsi wholly infuscated; fore tibia on the hind side with a row of five or six smallish bristles, ending before the tip. Fore tarsus once and a half the length of the tibia; the first joint has on the under side a row of fine hairs and a few scattered bristles; middle tibia with a row of close, erect bristles, some 30 in number, on the inner side in front; this row continues the greater part of the length of the metatarsus, and there are besides a number of scattered small hairs on the under side of the metatarsus; hind tibia rather hairy, with three small bristles on the outer side. Wings with the usual two crossbands, which are narrower than in most species, and sometimes not very prominent; apex of wing largely hyaline.

Female.—This sex has yellow fore coxæ, hence I am unable to find any available characters to separate it from *scaber* or *sipho*. I have many specimens of the three.

Length 6.4 mm.

About 40 males, Opelousas, La., April and May (Dr. Hough).

***Psilopodinus flavipes* sp. nov.**

Male.—Face pollinose with whitish, and bearing numerous pale hairs; antennæ black, with only one or two rather long hairs below on the second joint; front bright green. Thorax bright green, the sides thinly dusted with white pollen; halteres yellow. Abdomen bright green, with very narrow bands of black; hypopygium very small, almost entirely enclosed in the abdomen, but with a pointed end directed forward. Legs, except middle and hind coxæ and their trochanters, yellow; fore and middle tarsi infuscated from the tip of the first joint; hind tarsi and tips of the tibiæ infuscated. On the outer side of the hind tibia before the middle is a conspicuously long bristle; otherwise the legs do not show any characters of importance. Wings hyaline, venation as in *caudatus*.

Female.—Face with the same hairs; middle tibiæ with two or three scattered long bristles; fore tibiæ with a few smaller.

Length 3.6 mm.

Several specimens, Brookings, S. D., and New Bedford, Mass., the latter from Dr. Hough.

This species is almost identical with *inermis* Loew, except that the male has yellow femora, like the female.

AGONOSOMA.

Guérin-Ménéville, Voyage sur la Cowette, 1838, 293.

Aldrich, Kans. Univ. Quart., II, 48, 1893 (*Gnamptopsilopus*); Can. Ent., Aug., 1904, 246.

TABLE OF NORTH AMERICAN SPECIES.

1. Antennæ entirely black2.
At least the basal joints yellow.....6.
2. Femora yellow3.
Femora black.....5.
3. Fore coxæ with black bristles at tip (Mex.).....**infumatum** Aldrich.
Fore coxæ with pale bristles at the tip4.
4. Base of hind coxæ and hind margin of pleura pale (U. S.)...**costalis** n. sp.
Base of hind coxæ and hind margin of pleura dark (U. S.)...**scintillans** Loew.
5. Wings without black markings (Mex.)...**ciliipennis** Aldrich.
Wings black, except apex and hind margin (Mex.)...**dimidiatum** Loew.
6. Dorsum of thorax yellow, with a green or blue stripe.7.
Dorsum of thorax wholly metallic.....8.
7. Pleura yellow; middle tibiæ and metatarsi with erect cilia (W. I.).
flavidum Aldrich.
Pleura with an indistinct dark spot; tarsi plain (W. I.)...**dorsale** Loew.
8. Thoracic dorsum opaque, dusted; abdomen not pale at base (U. S.).
pallens Loew.
Thoracic dorsum shining, abdomen usually pale at base.....9.
9. Middle coxæ infuscated on outer side at least to middle.....10.
Middle coxæ wholly or almost wholly yellow.....13.
10. Costa of male ciliated, with an angular projection forward near the tip (U. S.).
psittacinum Loew.
Costa of male without such projection.....11.
11. Middle femora of male shortened, dark at base, the tibiæ elongate (U. S.).
filipes Loew.
Middle femora of male normal, pale.....12.
12. Abdomen pale at base above (U. S., Cuba)**variegatum** Loew.
Abdomen not pale at base above (Cuba).....**castum** Loew.
13. Fore femora with slender erect bristles below (U. S.).....**tener** Loew.
Fore femora not with such bristles.....14.
14. Hind margin of pleura yellow.....15.
Hind margin of pleura green (Mex.).....**mexicanum** Aldrich.
15. Abdomen above with basal yellow band, remainder green (U. S.).
(*bicolor* Loew) **unifasciatum** Say.
Abdomen with several bands, including the greater part of first four segments (U. S.).....**rotundiceps** n. sp.

Agonosoma rotundiceps sp. nov.

Male.—Face remarkably narrow, even the upper part, white pollinose; palpi and proboscis pale yellow; antennæ small, yellow, tip of third joint infuscated; front with considerable white pollen. Thorax green, not very brightly shining, with a brassy stripe or mark on each side towards the margin; tegulæ with their cilia, halteres and hind margin of the thorax pale yellow. Abdomen yellow, with green bands on the incisures, which are very narrow near the base, but wider towards the apex, the last two segments are wholly green; hypopygium small, blackish, with two long, slender, yellow filaments. Legs, including coxæ, yellow, the tarsi moderately infuscated; middle tibiæ with quite noticeable minute bristles, part of which form a scattered row on the inner side; fore coxæ with yellow bristles at tip, hind ones with a single black one on the outer side. Wings hyaline, costa not ciliated, third vein bicurved at tip.

Length 3.4 mm.

A single male, Biscayne Bay, Fla., collected by Mrs. Annie T. Slosson.

This species must be nearly related to *flavicornis*, described by me from St. Vincent, W. I. That species is known only in the female sex, and the types are not accessible, being in London. The species here described seems to have much more yellow on the abdomen, and the bristles of the middle tibiæ constitute an important distinction.

The roundness of the head is very noticeable from in front.

Agonosoma costale sp. nov.

Male.—Face and lower part of the front with thin golden pollen, not visible, except in an oblique view; with a side light, however, two round spots above the antennæ may be observed in a direct view. Antennæ black, small; cilia of the inferior orbit pale yellow. Dorsum of thorax bright green, the pleuræ a little pollinose with white; posterior edge of the pleuræ, the halteres and tegulæ, and the tegular cilia, yellow. Abdomen green, with a scarcely perceptible brownish yellow dust on the latter part; first segment with a yellow crescent above, and the venter yellow on its basal third; hypopygium minute, embedded, only a pair of minute dark appendages visible. Fore and hind coxæ yellow, middle ones infuscated more than half the length; femora and tibiæ yellow, the fore tibiæ with no bristles, except a minute one near the base on the outer side; tarsi plain, infuscated from the latter part of the first joint. Wings with a yellowish tinge, the costa somewhat thickened and ciliated to the end of the second vein with close, stout, erect cilia, which do not decrease in size, but are rather large towards the end. There is a peculiar and very conspicuous crook in the costa before the end of the second vein, making a notch in the wing, in which are several much longer hairs, standing at an angle with the surface of the wing. The segment of the fourth vein from the hind crossvein to the fork is more than double the length of that from the fork to the margin.

Female.—Costa entirely destitute of any cilia; pollen of front yellow, but very difficult to perceive, that of the face also very indistinct, but more whitish.

Length 3-4 mm.

One male, two females, Tifton, Ga., June 8 and 11, 1896; collected by Dr. Garry de N. Hough.